

Abstract Of The Disclosure

A supercharged internal combustion engine is provided having a common exhaust manifold and a common combustion air manifold for all engine cylinders. The engine has a plurality of exhaust-driven superchargers that are staggered as a function of the engine output. Each supercharger is engageable or disengageable with the exhaust manifold via its exhaust-driven turbine. Each supercharger, at an input side of its compressor, has a line connection, via a respective valve mechanism, to the output of a charging fan disposed upstream and in series with the compressor. For an oppositely directed changeover between supply air compressed by the charging fan, and ambient air, all of the valve mechanisms are adjusted as a function of the speed of an associated supercharger and a combustion air operating pressure. A processor having a stored requirements profile is provided for the sole release of the valve mechanism of a given supercharger.